B9 Cont'd.

and an electromotive element for driving the compressing element in a sealed container.

Please insert the heading before the paragraph beginning at page 1, line 11 as follows:

2. Description of the Related Art

Please replace the paragraph beginning at page 1, line 11 with the following rewritten paragraph:

As a conventional electromotive element for driving a sealed motor compressor forming a freezing cycle of a refrigerator (freezer), or an air conditioner, an induction motor driven by a single-phase commercial power source, DC brushless motor, and the like have been employed. An electromotive element of the motor is fixed in a sealed container, and the electromotive element is formed of a stator comprising a stator winding, and a rotor rotating in the stator. Moreover, the electromotive element supplies a commercial alternating current supply to the stator winding to induce/rotate the rotor.

Please replace the paragraph beginning at page 1, line 22 with the following rewritten paragraph:

However, the DC brushless motor requires a drive control equipment, and disadvantageously results in a cost increase. Moreover, because a secondary copper loss is theoretically present in the induction motor, running efficiency is limited. Therefore, there has been a desire for further improvement of the running efficiency of the sealed motor compressor driven by the commercial

B3 cont'd.

single phase power source without using any control equipment.

Please replace the paragraph beginning at page 2, line 9 with the following rewritten paragraph:

B4

The present invention has been developed to solve such related art problem, and an object thereof is to provide a sealed motor compressor whose single-phase bipolar construction largely enhances a motor running efficiency.

Please replace the paragraph beginning at page 2, line 13 with the following rewritten paragraph:

Another object of the present invention is to provide a sealed motor compressor in which an electromotive element with a three-phase bipolar construction can be driven with a high efficiency without requiring any drive control equipment.

Please replace the paragraph beginning at page 2, line 18 with the following rewritten paragraph:

That is to say, according to the present invention, there is provided a sealed motor compressor containing a compressing element and an electromotive element for driving the compressing element in a sealed container. The electromotive element is fixed to the sealed container, and formed of a stator provided with a stator winding and a rotor which rotates in the stator. The rotor comprises a squirrel-cage secondary conductor disposed in a peripheral portion of

B4 con't.

a rotor yoke, and a permanent magnet embedded in the rotor yoke.

Please replace the paragraph beginning at page 3, line 1 with the following rewritten paragraph:

Moreover, for the sealed motor compressor of the present invention, in the above, the electromotive element comprises a single-phase bipolar construction.

Please replace the paragraph beginning at page 3, line 13 with the following rewritten paragraph:

Moreover, in the sealed motor compressor of the present invention, the squirrel-cage secondary conductor of the rotor comprises a skewed structure.

Please replace the paragraph beginning at page 3, line 17 with the following rewritten paragraph:

Furthermore, for the sealed motor compressor of the present invention, the permanent magnet is a rare earth magnet.

Please replace the paragraph beginning at page 3, line 20 with the following rewritten paragraph:

Additionally, for the sealed motor compressor of the present invention, the number of permanent magnets embedded in the rotor yoke is any number selected from the group consisting of two, four, six and eight.

B4

Please replace the paragraph beginning at page 3, line 25 with the following rewritten paragraph:

Moreover, the sealed motor compressor of the present invention further comprises current-sensitive protection means for detecting a line current.

Please replace the paragraph beginning at page 4, line 2 with the following rewritten paragraph:

Furthermore, according to the present invention, there is provided a sealed motor compressor containing a compressing element and an electromotive element for driving the compressing element in a sealed container. The electromotive element is driven by a three-phase power source, fixed to the sealed container, and constituted of a stator provided with a stator winding and a permanent magnet embedded type rotor which rotates in the stator. The rotor comprises a squirrel-cage secondary conductor disposed in a peripheral portion of a rotor yoke, and a permanent magnet embedded in the rotor yoke.

Please replace the paragraph beginning at page 4, line 16 with the following rewritten paragraph:

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Furthermore, in the sealed motor compressor of the present invention, the squirrel-cage secondary conductor of the rotor comprises a skewed structure, and a skew pitch is more than 0, and is 1.5 slot pitches or less.

Please replace the paragraph beginning at page 4, line 21 with the following rewritten paragraph:

B4 cont'd.

Additionally, for the sealed motor compressor of the present invention, the permanent magnet is a rare earth magnet.

Please replace the paragraph beginning at page 4, line 25 with the following rewritten paragraph:

Moreover, for the sealed motor compressor of the present invention, the number of permanent magnets embedded in the rotor yoke is an even number.

Please replace the paragraph beginning at page 5, line 2 with the following rewritten paragraph:

Furthermore, the sealed motor compressor of the present invention further comprises current-sensitive protection means for detecting a line current.

Please replace the paragraph beginning at page 5, line 6 with the following rewritten paragraph:

B4 con'd.

Additionally, for the sealed motor compressor of the present invention capability control is enabled.

Please replace the paragraph beginning at page 7, line 10 with the following rewritten paragraph:

B5

An embodiment of the present invention will next be described with reference to the drawings. Fig. 1 is a vertical side sectional view of a sealed motor compressor C to which the present invention is applied. In Fig. 1, in a sealed container 1, a motor (alternating current induction motor) 2 is contained as an electromotive element in an upper part of the container, and a compressing element 3 rotated/driven by the motor 2 is contained in a lower part of the container. The sealed container 1 contains the motor 2 and compressing element 3 beforehand in two pre-divided sections, and hermetically closing the sections by high-frequency welding. Additionally, examples of the sealed motor compressor C include a rotary compressor, reciprocating compressor, and a scroll compressor.

Please replace the paragraph beginning at page 7, line 24 with the following rewritten paragraph:

The motor 2 is provided with a single-phase bipolar construction, and includes a stator 4 fixed to an inner wall of the sealed container 1, and a rotor 5 supported inside the stator 4 to be freely rotatable centering on a rotation shaft 6. Moreover, the stator 4 is provided with a stator winding 7 for supplying a rotary magnetic field to the rotor 5.

Please replace the paragraph beginning at page 9, line 24 with the following rewritten paragraph:

Fig. 2 is a plan view of the rotor 5 shown in Fig. 1, and Fig. 3 is a transverse top plan view of the rotor 5. The rotor 5 is formed of a rotor yoke 5A, squirrel-cage secondary conductor 5B disposed in a peripheral portion of the rotor yoke 5A, and a permanent magnet 31 embedded in the rotor yoke 5A. A plurality of squirrel-cage secondary conductors 5B are disposed in the peripheral portion of the rotor yoke 5A, and the conductor is injection-molded in a cylindrical hole (not shown) formed in a squirrel-cage shape across an extending direction of the rotation shaft 6 by aluminum die casting. Both ends of the squirrel-cage secondary conductor 5B are formed in a so-called skewed structure such that each end is sloped in a spiral form with a predetermined angle in a circumferential direction of the rotation shaft 6.

B6

Please replace the paragraph beginning at page 10, line 12 with the following rewritten paragraph:

Moreover, two permanent magnets 31 are embedded in the rotor yoke 5A. The permanent magnets 31 are formed in plate shapes, disposed opposite and parallel to each other centering on the rotor 5, and embedded from one end to the other end of the rotor yoke 5A. Used in the permanent magnet 31 is a rare earth magnet which has a highest magnetic flux density among permanent magnets. Opposite surfaces of the permanent magnets 31 are embedded with different magnetic poles. That is to say, the respective permanent magnets 31 are embedded toward the outside of the circumferential direction of the rotor 5 with different magnetic poles, and constructed such that a

B6 cont'd.

rotating force can be imparted to the rotor 5 with magnetic force lines of a main winding 7A and auxiliary winding 7B described later.

Please replace the paragraph beginning at page 11, line 25 with the following rewritten paragraph:

B7

Operation of the aforementioned construction will next be described. Additionally, it is assumed that the motor 2 is stopped and the startup switch 33A is closed. Moreover, when the power switch (protection switch 34A) is closed, current starts to flow to the main winding 7A and auxiliary winding 7B. Furthermore, because the auxiliary winding 7B is connected to a parallel circuit of the startup capacitor 33 and running capacitor 32, the rotor 5 obtains a required startup torque and starts in a predetermined rotation direction.

Please replace the paragraph beginning at page 12, line 8 with the following rewritten paragraph:

In this case, because the rotor 5 has a squirrel-cage secondary conductor similar to a general induction machine, the rotor 5 responds to the current flowing to the stator winding 7 and the motor 2 is started. Moreover, when the rotor 5 is accelerated to achieve rotation at a predetermined number of revolutions (in this case, about 80% of the number of synchronous revolutions), the startup switch 33A is opened to disconnect the startup capacitor 33 from the circuit, and the motor 2 is operated only by the running capacitor 32. Thereby, during a transient state of the motor 2 from a startup moment at which the power switch closes until the motor enters synchronous running, it is possible

B7

to generate a torque larger than a braking torque generated by the permanent magnet 31. Therefore, during self starting, the surpassing large torque is generated and the motor can be started.

Please replace the paragraph beginning at page 12, line 24 with the following rewritten paragraph:

Moreover, because the squirrel-cage secondary conductor 5B of the rotor 5 is provided with the skewed structure, similarly as the conventional induction motor, self starting can easily be performed with the single phase power source. Moreover, because the synchronous running can be secured by the permanent magnet 31, secondary copper loss during running can largely be decreased.

Please replace the paragraph beginning at page 13, line 4 with the following rewritten paragraph:

On the other hand, during running of the motor 2, the line current detector 34B monitors the current flowing through the stator winding 7, and it is possible to cut off the power supply to the motor 2 when the rotor 5 generates heat. That is, when the rotor 5 generates heat, the protection means 34 cuts off the current flowing through the stator winding 7, and prevents the rotor 5 from further raising its temperature. This can prevent the permanent magnet 31 embedded in the rotor 5 from being demagnetized by heat (demagnetization by temperature). Additionally, because demagnetization by a predetermined temperature added to the permanent magnet 31 is a conventional known technique, detailed description thereof is omitted.

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Please replace the paragraph beginning at page 13, line 17 with the following rewritten paragraph:

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As described above, because in the rotor 5 of the motor 2 provided with the single-phase bipolar constitution, the permanent magnets 31 are embedded in the squirrel-cage secondary conductor 5B disposed in the peripheral portion of the rotor yoke 5A, and the rotor yoke 5A, the self starting can be performed even in the single-phase bipolar constitution similarly as the conventional induction motor. Additionally, during running, the synchronous running can be secured by the action of the embedded permanent magnet 31, the braking torque generated during the transient state from the starting until the synchronous running raises no problem, and the secondary copper loss during running can largely be reduced.

Please replace the paragraph beginning at page 14, line 3 with the following rewritten paragraph:

Moreover, because the winding ratio of the main winding 7A to the auxiliary winding 7B by the effecting winding number calculation, a stator winding structure can remain to be the single-phase bipolar structure similarly as the conventional induction motor. This obviates the necessity of additional equipment such as changing of the equipment associated with manufacturing of the stator. Additionally, a running capacitor capacity can be matched to largely improve the running efficiency.

Please replace the paragraph beginning at page 14, line 12 with the following rewritten paragraph:

B7 con

Furthermore, because the squirrel-cage secondary conductor 5B is provided with the skewed structure, similarly as the conventional induction motor, it is possible to easily perform self starting with the single phase power source. This allows the motor 2 to easily perform the self starting even with the single phase power source. Moreover, because the permanent magnet 31 is formed of a rare earth magnet, it is possible to remarkably increase the magnetic flux density of the permanent magnet 31.

Please replace the paragraph beginning at page 14, line 21 withy the following rewritten paragraph:

Moreover, because two, four, six, or eight permanent magnets 31 are embedded in the rotor yoke 5A, it is possible to set the number of permanent magnets 21 in accordance with a purpose of the motor 2 for use. Furthermore, because the power supply circuit of the stator winding 7 is provided with the current sensitive protection means 34 for detecting the line current, during heating of the rotor 5, the power supply to the motor 2 can be cut off to suppress the temperature rise of the rotor 5. This can prevent the permanent magnet 31 embedded in the rotor 5 from causing the temperature demagnetization by the heat.

IN THE CLAIMS:

Amend claims 1-13 and 15 as follows:

SUB C1

1. (Amended) A sealed motor compressor comprising, in a sealed container, a compressing element and an electromotive element for driving the compressing element,

wherein said electromotive element is fixed to said sealed container and comprises a stator provided with a stator winding and a rotor which rotates in the stator, and

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wherein said rotor comprises a squirrel-cage secondary conductor disposed in a peripheral portion of a rotor yoke and a plurality of permanent magnets embedded in the rotor yoke.

2. (Amended) The sealed motor compressor according to claim 1, wherein the electromotive element comprises a single-phase bipolar constitution.

3. (Amended) The sealed motor compressor according to claim 2, wherein the electromotive element is started by a system in which a startup capacitor is used.

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4. (Twice Amended) The sealed motor compressor according to claim 2, wherein the stator winding comprises a main winding and an auxiliary winding, and a winding ratio of the respective windings by effective winding number calculation is set to be in a range of 1.0 ± 0.5.

5. (Twice Amended) The sealed motor compressor according to claim 1, wherein the squirrel-cage secondary conductor of the rotor comprises a skewed structure.

6. (Twice Amended) The sealed motor compressor according to claim 1, wherein each of the permanent magnets is a rare earth magnet.

B9 cont'd.

Sub C2

7. (Twice Amended) The sealed motor compressor according to claim 1, wherein the number of the permanent magnets embedded in the rotor yoke is any number selected from the group consisting of two, four, six and eight.

8. (Twice Amended) The sealed motor compressor according to claim 1, further comprising current-sensitive protection means for detecting a line current.

Sub C3

B10

9. (Amended) A sealed motor compressor comprising, in a sealed container, a compressing element and an electromotive element for driving the compressing element, said electromotive element being driven by a three-phase power source,

wherein said electromotive element is fixed to said sealed container and comprises a stator provided with a stator winding and a permanent magnet embedded type rotor which rotates in the stator, and

said rotor comprises a squirrel-cage secondary conductor disposed in a peripheral portion of a rotor yoke and a plurality of permanent magnets embedded in said rotor yoke.

10. (Amended) The sealed motor compressor according to claim 9, wherein the electromotive element comprises a three-phase bipolar constitution.

11. (Twice Amended) The sealed motor compressor according to claim 9, wherein the squirrel-cage secondary conductor of the rotor comprises a skewed structure, and a skew pitch is set to more than 0, and 1.5 slot pitches or less.

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12. (Twice Amended) The sealed motor compressor according to claim 9, wherein each of the permanent magnets is a rare earth magnet.

SUB C4

13. (Twice Amended) The sealed motor compressor according to claim 9, wherein the number of the permanent magnets embedded in the rotor yoke is any even number.

15. (Twice Amended) The sealed motor compressor according to claim 9, wherein capability control is possible.